



FLUORESCENT REFLECTIVE SHEETING (MSP-01-05)

1.0 DESCRIPTION. This specification covers fluorescent reflective sheeting for highway and construction signing.

2.0 MATERIALS.

2.1 General. Reflective sheeting shall be in accordance with Sec 1042.2.7 except as noted herein.

2.2 Reflective Sheeting. Reflective sheeting shall be in accordance with ASTM D 4956, Type IV, Class 1, except as noted herein.

2.2.1 Reflective sheeting shall meet or exceed the minimum coefficient of retroreflection requirements as shown in Table I, expressed as candelas per footcandle per square foot (candelas/lux/m²). Coefficient of Retroreflection values are the mean of test results obtained from readings taken with orientation angles of 0° and 90°.

TABLE I - Reflective Sheeting - Minimum Coefficient of Retroreflection, Ra				
Observation Angle, Degrees	Entrance Angle, Degrees	Orange	Yellow Green	Yellow
0.2	-4	200	325	240
0.2	+30	85	205	150
0.5	-4	80	235	165
0.5	+30	50	110	75

2.2.2 Reflective sheeting shall meet the color specification limits (daytime) and luminance factor (daytime luminance) requirements as shown in Table II.

TABLE II – Fluorescent Reflective Sheeting Color Specification Limits (Daytime) - Luminance Factor, Y%										
	1		2		3		4		Luminance Factor (Y)	
	x	y	x	y	x	y	x	y	Min	Max
Orange	.583	.416	.523	.397	.560	.360	.631	.369	28	---
Weathered	.583	.416	.523	.397	.560	.360	.631	.369	20	45
Yellow Green	.387	.610	.460	.540	.421	.486	.368	.539	60	---
Weathered	.387	.610	.460	.540	.421	.486	.368	.539	50	---
Yellow	.498	.412	.557	.442	.479	.520	.438	.472	40	---

Note: The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1931 Standard Colorimetric System measured with CIE Standard Illuminant D65.

2.2.3 Reflective sheeting shall have a specular gloss of not less than 50.

2.3 Fluorescent Orange reflective sheeting for work zones shall be submitted for one year exposure on NTPEP test decks.

3.0 MANUFACTURER AND BRAND NAME APPROVAL.

3.1 Prior to approval and use of the materials, the manufacturer shall submit to the State Project Operations Engineer, NTPEP test results from all test decks and certification, showing specific test results, that the materials are in accordance with this provision. In addition, the

manufacturer shall submit to the Project Operations, samples representing the reflective sheeting tested by NTPEP and inks. These samples shall be accompanied by a product data sheet, a material safety data sheet, technical bulletins on sign fabrication and any special fabrication instructions relative to the reflective sheeting being submitted. Samples of reflective sheeting shall be a minimum of 13 inches by 13 inches (330.2 mm by 330.2 mm). Upon approval of the reflective sheeting system, the brand name will be placed on a list of prequalified reflective sheeting systems. The approval will be based upon satisfactory NTPEP test results for reflective sheeting, satisfactory field performance and additional verification testing as required.